

REMARKS

I. Status of the Application

This preliminary amendment accompanies a request for CPA of serial no. 09/365,978.

New claims 34-54 are presented herewith. No new matter has been introduced. Claims 1-5, 8, 11-14, 17, 20-25, 28, and 31-33 previously pending in serial no. 09/365,978 are now canceled without prejudice.

An Information Disclosure Statement listing new references (copies included) is attached herewith.

Consideration of new claims 34-54 is respectfully requested.

II. Support for New Claims

New claims 34-59 are generally directed to a switchable bio-assay device having a molecular binding region comprising a part of the device's signal path, and an array element connected in parallel to the molecular binding region to selectively "switch out" the molecular binding region portion of the signal path. Several embodiments of this bio-assay device architecture are illustrated in Figs. 7B-7E, corresponding description of those embodiments being found on page 32, line 17 to page 34, line 21.

Specifically, claim 34 recites "*a signal path operable to support the propagation of an electromagnetic signal therealong, the signal path comprising a molecular binding region.*" Exemplary embodiments of this structure are Figs. 7B-7E, as described above. As described on page 22, lines 15-25, the signal path may consist of a variety of different architectures, for instance, a microstrip line, a coplanar waveguide line, a coaxial cable, or a slot line. The molecular binding region is described throughout the specification, for instance, on page 11, lines 19-32. The molecular binding region may consist of ligands (page 11, line 23), an example of which includes a cell (page 7, line 15). In another embodiment, the ligand of the molecular binding region consists of a protein (page 7, line 14), an example of which is a drug receptor such as a G-protein coupled receptors (page 10, line 26).

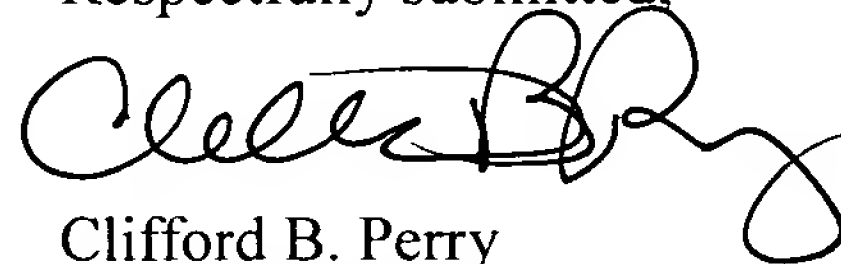
Claim 34 further recites “*an array element connected in parallel to that portion of the signal path comprising the molecular binding region, the array element having an operational state for supporting the propagation of an electromagnetic signal therethrough in parallel to that portion of the signal path comprising the molecular binding region.*” Support for this recitation is found in the aforementioned Figs. 7B-7E and corresponding description of page 32, line 17 to page 34, line 21. The array element may comprise various types of transistors, diodes, or switches which may be electronically or optically controlled. The array elements may consist of field effect transistors, bipolar transistors, p-i-n diodes, or addressable switches, each of which may be integrally formed as a part of the semiconductor fabrication process, or fabricated separately. In an embodiment in which two or more array elements are used in parallel in a bio-assay array, an input switch is used to switch the incoming test signal to one of the array elements, and an output switch is used to route the resulting modulated signal to the device’s output port. These features are described in the specification, for instance on page 32, lines 9-16.

Claims 35-47 recite various embodiments of one of these three recited elements, the support for which is found in the aforementioned sections as well as other locations of the specification. Claim 44 recites a further embodiment of the array element as a switch, commonly known as a micro-electromagnetic systems (MEMS) switch. Claims 48-54 recite embodiments for the bio-assay array which include the aforementioned signal path, molecular binding region, and array elements previously described. Input and output switches are recited in claim 49, the support for which is provided above.

Conclusion

The Applicant submits that all pending claims are allowable over the references of record, including the references cited herein. Should the Examiner have any questions regarding the present application, a telephone call to the Applicant's representative, Clifford Perry, at (510) 576-2339 is invited.

Respectfully submitted,



Clifford B. Perry
Reg. No. 43,854

Signature BioScience, Inc.
21124 Cabot Boulevard
Hayward, California 94545-1130
Tel: (510) 576-2334
Fax: (510) 576-2434
CBP/dmv